

**REMARKS**

**STATUS OF THE CLAIMS**

Claims 1-26 are pending in the application.

Claims 5, 9, 15, and 18-22 are allowed.

Claims 1-4, 6-8, 10-14, 16, 17, and 23-26 are rejected.

Claims 1, 2, 4, 6, 7, 10, 12, 16, 17, and 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Limb in view of Tateyama (U.S. 006018816A), which was newly cited in the final Office Action of May 31, 2005.

Claims 3, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Limb in view of Tateyama and further in view of Perlman (US 5,398,242).

Claims 8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Limb in view of Tateyama and further in view of Ching (US 4,665,514).

**REJECTIONS**

Independent claims 1, 10, 12, 16, 23, and 24 have been rejected under 35 USC 103(a) as being unpatentable over Limb (US 5,111,456) in view of Tateyama (US006018816A).

Independent claim 13 has been rejected under 35 USC 103(a) as being unpatentable over Limb in view of Tateyama and further in view of Perlman (US 5,398,242).

The rejected independent claims 1, 10, 12, 13, 16 and 24 are amended for clarity. No new matter has been added in this Amendment.

The foregoing rejections are hereby traversed, as follows:

The examiner acknowledges that Limb does not explicitly disclose the nodes within an IEEE 1394 topology. This is true. Limb teaches a method and system for data transfer in a network including two communication paths 10, 11 for connecting nodes S1, S2, ...SN. Note that the communication paths 10, 11 are unidirectional and oppositely directed with respect to each other (see claim 1 of Limb). Therefore, it is readily apparent that the method and system of Limb are not applicable to an IEEE 1394 network, such as a branched network shown in Fig. 1 of the present Application. Therefore, there is no motivation to combine the method and system of Limb, which are not applicable to an IEEE 1394 network, with nodes constituting an IEEE

1394 topology as shown in Tateyama to arrive at the present invention. The Applicants submit that the rejection is based upon hindsight and is improper.

In addition, Tateyama teaches of receiving a dummy packet not having a data portion (i.e., repeatedly transmitting data - column 2, lines 49-59, and Abstract, claims 1, 10, 16, and 23 as relied upon in the final Office Action, page 4). Clearly, Tateyama teaches away from the claimed present invention, because it is impossible to write data in a data packet not having a data portion, or in other words, Tateyama fails to disclose or suggest the claimed present invention's, "**storing data to be written in a data portion of a packet addressed to the third node** in the data portion of the write packet **at the second node**" (e.g., independent claim 1), when Tateyama only discusses repeatedly transmitting data that "solves a problem that if omission of data packet occurs in isochronous transfer capable of high-speed data transfer, only data without the omitted data packet is sent to a transfer destination" (Abstract, column 2-3). More particularly, Tateyama discusses:

A system comprising devices connected via a 1394 serial bus solves a problem that if omission of data packet occurs in isochronous transfer capable of high-speed data transfer, only data without the omitted data packet is sent to a transfer destination. A recording/reproduction device 101 **repeatedly sends image data stored in a storage medium by the isochronous transfer**, and a printer 102 receives the image data repeatedly sent by the isochronous transfer. **If a data packet has been omitted in the received data, the omitted data packet is obtained from the data repeatedly sent by the isochronous transfer**, thus the printer 102 can print an image based on the complete image data (Abstract).

See also, column 2, line 41 to column 3, line 58 of Tateyama.

Accordingly, it is readily apparent that the teaching of Tateyama is against the teachings of Limb. More particularly, there is no motivation to modify Limb in view of Tateyama to arrive at the claimed present invention, because:

MPEP 706.02(j) sets forth a guideline on the contents of a rejection under §103: "To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of

success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP 2143-2143.03 for decisions pertinent to each of these criteria." Factual findings in support of a *prima facie* case of obviousness must be supported by substantial evidence. *In re Zurko*, 59 USPQ2d 1693, 1696 (Fed. Cir. 2001).

There is no suggestion or motivation, either in Limb or Tateyama or in the knowledge generally available to one of ordinary skill in the art at the time the claimed present invention was made, to modify Limb or to combine Limb with Tateyama, because as the final Office Action acknowledges Limb fails to disclose or suggest an IEEE 1394 network topology. Further, Tateyama fails to disclose or suggest modifying Limb to be applied to an IEEE 1394 network topology, because Tateyama only discusses repeatedly transmitting data in an IEEE 1394 network to handle an abnormality in the data transmission (column 2, lines 41-59). In other words, first there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Limb to be applied to an IEEE 1394 network topology. Limb is expressly limited to two unidirectional and oppositely directed communication paths as suggested in column 9, lines 54-56, "The present invention is applicable to any system in which a plurality of stations are interconnected by a pair of signal paths," and fails to discuss any alternative networks of the claimed present invention's, "***the plurality of nodes constitute an IEEE 1394 topology.***"

The final Office Action in page 4 provides, "It would have been obvious to one of ordinary skill in the art at the time of the invention to implement the method and system of Limb using nodes constituting an IEEE 1394 topology, as shown by Tateyama, as the IEEE 1394 is a standard bus topology/type widely used in the art, enabling standardized communication and performance between the nodes of Limb." However, the final Office Action is improperly using the claimed present invention's advantage or benefit in hindsight as motivation evidence to modify Limb in view of any IEEE 1394, because although Tateyama discusses solving a problem in an IEEE 1394, Tateyama is absolutely silent on solving the claimed present invention's problem in an IEEE 1394 network topology and in fact as discussed above teaches away from the claimed present invention by discussing repeatedly transmitting data in an IEEE 1394 network that "solves a problem that if omission of data packet occurs in isochronous transfer capable of high-speed data transfer, only data without the omitted data packet is sent to a transfer destination" (Abstract, columns 2-3). In other words, the final Office Action is using the teaching or suggestion of, for example, amended independent claim 1, "***transferring a write***

packet from thea first node to thea second node, when a plurality of nodes, including the first node, the second node and a third node, connect by a bus but not connect in a ring form and the plurality of nodes constitute an IEEE 1394 topology, and storing data to be written in a data portion of a packet **addressed to the third node** in the data portion of the write packet **at the second node,**" based upon the Applicant's disclosure, which is not proper, because such teaching or suggestion is not found in Limb or Tateyama. See W.L. Gore & Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983) ("To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher").

When obviousness is based on the teachings of multiple prior art references, the final Office Action must establish some **suggestion, teaching, or motivation** that would have led a **person of ordinary skill in the art to combine** the relevant prior art teachings in the manner claimed **at the time the invention was made**. The best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references; see generally, In re Dembiczak, 175 F.3d 994 (Fed. Cir. 1999), which also provides, "[c]ombining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability - the essence of hindsight." Dembiczak, 175 F.3d at 999 (Fed. Cir. 1999). It was not obvious at the time the present claimed invention was made to provide a data packet transfer in an IEEE 1394 network topology as recited in each independent claim 1, 10, 12, 13, 16, 23 and 24, because Tateyama fails to provide any suggestion, teaching, or motivation to be combined with and to modify Limb by being silent on improving data transfer efficiency in an **"IEEE 1394 topology"** by, for example, increasing data transfer speed (e.g., simultaneous transfers, etc.) as recited in each of the independent claims. See, page 15, line 7 to page 16, line 24, page 19, lines 8-20 and page 4, lines 13-15 of the present Application). Tateyama in column 2, lines 41-48, discusses, "The present invention has its object to perform high-speed data transfer by isochronous transfer, and if abnormal portion such as omission of data occurs, to correct the abnormal portion, ...". However, Tateyama's discussion relates generally to isochronous transfers capable of high-speed data transfer, and handling an omission during the isochronous transfer (Abstract). Therefore, Tateyama is silent on providing the claimed present invention's improving data

transfer efficiency in an “**IEEE 1394 topology**” by, for example, increasing data transfer speed (e.g., simultaneous transfers, etc.) as recited in each of the independent claims. See, page 15, line 7 to page 16, line 24, page 19, lines 8-20 and page 4, lines 13-15 of the present Application).

Applicants note that the recitation of each independent claim 1, 10, 12, 13, 16, 23 and 24 must be considered, because in contrast to Limb and Tateyama, each independent claim recites patentably distinguishing features of its own. The rejected independent claims 1, 10, 12, 13, 16, 23, and 24 are amended for clarity by expressly reciting, “***transferring*** a write packet from ~~the~~a first node to ~~the~~a second node, when a plurality of nodes, including the first node, the second node and a third node connect by a bus but not connect in a ring form and the plurality of nodes constitute an IEEE 1394 topology;” (claims 1, 10, 12, 13, 16, 23 and 24) and “***transferring*** a write packet from ~~the~~a first node to ~~the~~a second node, when a plurality of nodes, including the first node, the second node and a third node, are **connected in a star form** and the plurality of nodes constitute an IEEE 1394 topology” (claims 23 and 24), which is not disclosed or suggested by Limb’s unidirectional and oppositely directed, with respect to each other, two communication paths 10, 11 as shown in FIG. 1, and Tateyama’s IEEE 1394 network discussion fails to disclose or suggest any motivation to modify Limb to provide the claimed present invention’s ***data packet transferring in an IEEE 1394 topology*** in which:

Claim 1: ... ***transferring*** a write packet ~~from the~~a first node to ~~the~~a second node, when a plurality of nodes, including the first node, the second node and a third node, connect by a bus but not connect in a ring form and the plurality of nodes constitute an IEEE 1394 topology; and

***storing*** data to be written in a data portion of a packet ***addressed to the third node*** in the data portion of the write packet ***at the second node;***

Claim 10: ... an identification circuit as a first node identifying whether ~~the~~a data portion of ~~the~~a packet received from a second node connected to the first node is blank, when a plurality of nodes, including the first node, the second node and a third node, are **not connected in a ring form and the plurality of nodes constitute an IEEE 1394 topology;** and

a processor connected to the identification circuit and ***determining that data can be written to the data portion of the packet, when the data portion of the packet is blank*** according to the identifying by the identification circuit, and ***transferring the***

~~packet to a the third node, wherein the first node, the second node, and the third node are not connected in a ring form.~~

Claim 12: ... a processor retaining data addressed to the third node, and performing a multiplex transfer of the retained data and the data stored in the data portion of the packet received by the first node from the second node by rewriting the data stored in the data portion of the packet, which is received by the first node from the second node, to include the retained data addressed to the third node, when the data stored in the data portion of the packet received from the second node is addressed to the third node.

Support for the claim 12 amendments can be found, for example, in page 21, lines 9-14 of the present Application. At least independent claim 12 is allowable, because it recites "performing a multiplex transfer of the retained data and the data stored in the data portion of the packet received by the first node from the second node by rewriting the data stored in the data portion of the packet, when the data stored in the data portion of the packet received from the second node is addressed to the third node."

Claim 13: ... a processor as first node transferring a plurality of write packets, the data portion of which is blank, to each of the second and third nodes, when a plurality of nodes, including the first, second and third nodes, are not connected in a ring form and the plurality of nodes constitute an IEEE 1394 topology, based upon information indicating that the second and third nodes substantially simultaneously store data in the data portion of the write packets received from the first node.

Claim 16: ... a processor as a first node transferring to each second node a write packet, the data portion of which stores data, when a plurality of nodes, including the first, second and third nodes, are not connected in a ring form and the plurality of nodes constitute an IEEE 1394 topology, and then transferring another write packet, the data portion of which is blank, wherein each second node stores data in the blank data portion and transfers the packet to the third nodes.

At least independent claims 1, 10, and 16 are allowable, because they provide, "... transferring a write packet from the first node to the second node, when a plurality of nodes, including the first node, the second node and a third node, connect by a bus but not connect in a ring form and the plurality of nodes constitute an IEEE 1394 topology; and storing data to be written in a data portion of a packet addressed to the third node in the

data portion of the write packet **at the second node.**" Further, independent claim 13 is allowable, because it recites, "**as first node transferring a plurality of write packets**, the data portion of which is blank, to each of the second and third nodes ... **based upon information indicating that the second and third nodes substantially simultaneously store data in the data portion of the write packets received from the first node.**"

Claim 23: ... **transferring a write packet from the first node to the second node**, when a plurality of nodes, including the first node, the second node and a third node, are **connected in a star form and the plurality of nodes constitute an IEEE 1394 topology**;

**storing** data to be written in a data portion of a packet **addressed to the third node** in the data portion of the write packet **at the second node**; and

transferring the write packet from the second node to the third node.

Claim 24: an identification circuit **as a first node identifying whether the data portion of a packet received from a second node connected to the first node is blank**, when a plurality of nodes, including the first node, the second node and a third node, are **connected in a star form and the plurality of nodes constitute an IEEE 1394 topology**; and

a processor connected to the identification circuit and **determining that data can be written to the data portion of the packet, if the data portion of the packet is blank** according to the identifying by the identification circuit, and **transferring the packet to the third node.**

At least independent claims 23 and 24 are allowable, because they provide a "**a star form and the plurality of nodes constitute an IEEE 1394 topology.**"

Furthermore, the final Office Action rejection rationale is using the nature of the problem to be solved (e.g., performance) as basis of a suggestion or motivation to combine Limb and Tateyama. In particular, the nature of the problem to be solved must be such that it would have led a person of ordinary skill in the art with no knowledge of the claimed invention (i.e., at the time of the invention) to combine the prior art teachings **in the manner claimed**. See, *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998). It is readily apparent that Limb is directed to improving performance in a communication system having a plurality of nodes interconnected by two paths which are unidirectional and oppositely directed with respect to each other, and Limb is not directed to improving performance in an IEEE 1394 network topology. Furthermore, it is

readily apparent that Tateyama does not address the same problem as the claimed present invention's benefit of allowing efficient data transfer or improving data transfer efficiency in an **"IEEE 1394 topology"** by, for example, increasing data transfer speed (e.g., simultaneous transfers, etc.) as recited in each of the independent claims 1, 10, 12, 13, 16 and 23. See, page 15, line 7 to page 16, line 24, page 19, lines 8-20 and page 4, lines 13-15 of the present Application).

Contrary to the final Office Action rationale, Limb's method of communicating data on its two unidirectional and oppositely directed communication paths is not applicable to an IEEE 1394 network and Tateyama's discussion of an IEEE 1394 network in which dummy packets not having a data portion are transmitted and received to handle an abnormality (i.e., repeatedly transmitting data - column 2, lines 41-48, column 2, lines 49-59, and Abstract, claims 1, 10, 16, and 23 as relied upon in the final Office Action, page 4), teaches away from the claimed present invention, and accordingly cannot provide any motivation or suggestion to modify Limb to be applied to an IEEE 1394 network topology. The obviousness rejection is based upon hindsight and is improper. In other words, neither Limb and Tateyama references address a benefit of the claimed present invention of allowing efficient data transfer in an "IEEE 1394 topology," such as simultaneous transfer of data; so that a prima facie case of obviousness has not been established and claimed present invention can reasonably be held non-obvious or the subject matter as a whole would not have been obvious **at the time the invention was made** to a person having ordinary skill in the art.

#### INDEPENDENT CLAIMS 13

In rejecting independent claim 13 (and dependent claim 3), it is readily apparent that Perlman discusses a method of assigning LAN numbers to LANs in a network comprising of LANs and bridges connected to the LANs (Abstract). The final Office Action in page 7 relies on Perlman's column 6, lines 24-62 and FIG. 10C; column 2, lines 11-61, however, these Perlman discussions related to an all-paths explorer packet and special explorer broadcast message, which clearly differs from the claimed present invention's, "a processor **as first node transferring a plurality of write packets**, the data portion of which is blank, to each of the second and third nodes, when a plurality of nodes, including the first, second and third nodes, are not connected in a ring form and the plurality of nodes constitute **an IEEE 1394 topology, based upon information indicating that the second and third nodes substantially simultaneously store data in the data portion of the write packets received from the first**



**node**" (e.g., independent claim 13). In particular, for example, Perlman's bridge in column 6, lines 24-62, discusses that a bridge routes a received explorer message by writing routing information in the explorer message, however, Perlman is silent on any details of the routing information, so that Perlman's routing information differs from the claimed present invention's, **"information indicating that the second and third nodes substantially simultaneously store data in the data portion of the write packets received from the first node."** Further, the final Office Action in page 7 provides "It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Limb in order to send many write packets simultaneously like the broadcast packets in Perlman." However, Perlman's broadcast packets are not based upon the claimed present invention's, **"information indicating that the second and third nodes substantially simultaneously store data in the data portion of the write packets received from the first node"** where "a plurality of nodes, including the first, second and third nodes, are not connected in a ring form and the plurality of nodes constitute an IEEE 1394 topology."

In view of the remarks and claim amendments, withdrawal of the rejections of pending claims and allowance of rejected pending claims is respectfully requested.

### **CONCLUSION**

If there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

Respectfully submitted,  
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